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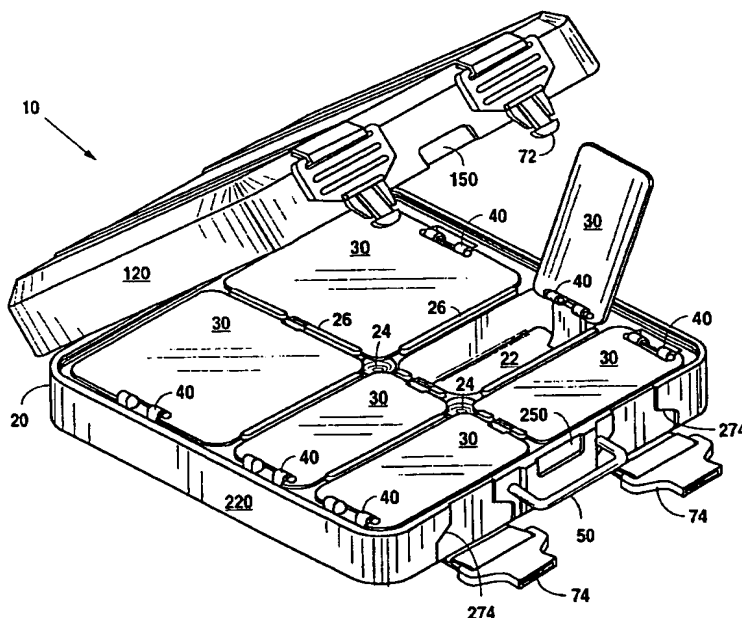
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**(54) Title:** PRIORITIZED FIRST AID KIT



**(57) Abstract:** This invention is directed to an improved first aid kit (10) having a foam case (20) with a plurality of integral, internal compartments (22) containing medical supplies for treating a number of medical emergencies. Each compartment is directed to a specific type of medical emergency, which is identified by indicia on the lid (30) of each compartment. The indicia on the compartment lids preferably contain simple, eye-catching, color-coded graphical illustrations of the particular medical emergencies so that an unskilled person can readily ascertain the appropriate compartments to access in an emergency situation.

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**PRIORITIZED FIRST AID KIT****INVENTOR: JUAN CARLOS ACEVES BLANCO****BACKGROUND OF THE INVENTION****1. Field of the Invention**

5        This invention relates generally to a first aid kit. More specifically, this invention is directed to a modular first aid kit having a plurality of compartments that contain selected articles for treating specific medical emergencies in a prioritized order of life threatening severity.

**10    2. Description of the Related Art**

      In the field of emergency medical care, a number of first aid kits have been developed for rendering medical care in emergency situations. For example, U.S. Pat. No. 5,848,700 to Horn is directed to an emergency medical care kit having a plurality of compartments  
15    containing medical supplies for treating a plurality of medical emergencies. The Horn kit has covers for the compartments which recite the various medical emergencies, and the particular medical emergency recited on each cover is different. However, the various emergencies of the Horn kit are not prioritized, which could lead an  
20    unskilled person in a multi-injury situation to proceed in a less than optimal manner, which in turn may result in further injury or even death. Additionally, the Horn kit is made of a pair of organizer units that are inserted into a hard walled carrying case, which appears to be similar to a conventional suitcase. As such, the Horn kit does not  
25    appear to be watertight nor to be capable of functioning as a personal flotation device. Further, the installation of the separate organizer units into the carrying case creates an extra step in the manufacturing process. Other currently available first aid kits suffer similar disadvantages.

In light of the foregoing disadvantages, it would be a significant advancement in the art of emergency medical care to provide a buoyant, color-coded, first aid kit that is prioritized with treatments for various medical emergencies in order of life threatening severity to enable an untrained person to render appropriate emergency medical care in time critical situations.

### SUMMARY OF THE INVENTION

Accordingly, this invention is directed to an improved first aid kit having a foam case with a plurality of integral, internal compartments containing medical supplies for treating a number of medical emergencies. Each compartment is directed to a specific type of medical emergency, which is identified by indicia on the lid of each compartment. The indicia on the compartment lids preferably contain simple, eye-catching, color-coded graphical illustrations of the particular medical emergencies so that an unskilled person can readily ascertain the appropriate compartments to access in an emergency situation. Additionally, the various medical emergencies are preferably prioritized in order of life threatening severity.

The compartment lids of the present invention are preferably installed with special hinges having ribs that are embedded in the foam of the case to help prevent the hinges from coming loose. Also, a preferred case comprises two interfitting modules that form a watertight seal to a depth of 50 cm. The two modules are connected with hinges that are fastened to the foam with special barbed fasteners. The two modules are also held together with a pair of straps that are fastened to the foam with similar barbed fasteners. A handle is fastened to one of the foam modules with a unique snap-in fastener.

### BRIEF DESCRIPTION OF THE DRAWINGS

This invention may best be understood by reference to the following drawings:

Fig. 1 is a perspective view of a closed first aid kit in accordance with the present invention.

Fig. 1A is a side elevational view of a fastener in accordance with the present invention.

5 Fig. 2 is a perspective view of the first aid kit of Fig. 1 in a partially opened position.

Fig. 3 is a top plan view of the first aid kit of Fig. 1 in the fully opened position.

Fig. 4 is a sectional view taken along line 4-4 of Fig. 3.

10 Fig. 5A is an exploded perspective view of an exterior hinge and associated fasteners for the first aid kit of Fig. 1.

Fig. 5A-1 is a side elevational view of an exterior hinge fastener of Fig. 5A.

15 Fig. 5A-2 is a detailed side elevational view of a portion of the exterior hinge of Fig. 5A.

Fig. 5B is a sectional view showing the installation of an exterior hinge of the first aid kit of Fig. 1.

Fig. 6 is a perspective view of an interior compartment lid hinge of the first aid kit of Fig. 1.

20 Fig. 7 is a sectional view showing the installation of an interior compartment lid hinge of the first aid kit of Fig. 1.

Fig. 8 is a rear elevational, partially sectioned view of the first aid kit of Fig. 1.

25 Fig. 9 is partially sectioned, partially exploded view showing the installation of the handle of the first aid kit of Fig. 1.

Fig. 9A is an exploded, partially sectioned view of a portion of Fig. 9.

Fig. 9B is a perspective view of a snap-in fastener of Fig. 9.

30 Fig. 10 is a sectional view of two interior compartment lids and a partition of the first aid kit of Fig. 1.

Fig. 11A is a detailed top plan view of a finger depression and adjacent interior compartment lids of the first aid kit of Fig. 1.

Fig. 11B is a sectional view of the finger depression and adjacent interior compartment lids of Fig. 11A.

5 Fig. 12 is a perspective view of an interior compartment lid of the first aid kit of Fig. 1.

Fig. 13 is a perspective view of one module of the first aid kit of Fig. 1.

10 Fig. 14 is an exploded perspective view illustrating a method of making holes for installation of fasteners on the first aid kit of Fig. 1.

Figs. 15 - 24 are illustrations of preferred indicia on the compartment lids of the first aid kit of Fig. 1.

#### DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

Referring to Fig. 1, a first aid kit 10 in accordance with the  
15 present invention preferably comprises a case 20 having two interfitting modules 120 and 220. Modules 120 and 220 are preferably molded from expanded polypropylene (EPP) foam, which is available from BASF, preferably having a density greater than 60 grams/liter and more preferably having a density of between about 70 grams/liter  
20 and 80 grams/liter. The EPP material provides a number of advantages to a first aid kit in accordance with this invention, including resistance to extreme temperatures from  $-40^{\circ}$  C to  $110^{\circ}$  C; resistance to ultraviolet rays; environmental cleanliness due to the absence of CFC agents; light weight; impact and scratch resistance due  
25 to a high resilience factor; and abrasion and chemical resistance due to closed cell construction. However, other forms of foam material, such as polyurethane foam or polyesterene foam, may possibly be used. Modules 120 and 220 are preferably hingedly connected along one edge (see Figs. 4, 5B, and 8) and fastened together with straps 60 and  
30 buckles 70. Straps 60 are preferably made of polypropylene webbing

having a thickness of about 1 mm and a width of about 50 mm. Buckles 70 are preferably of the plastic center-release type, each comprising a male buckle 72 and a female buckle 74 (as best shown in Fig. 2) which are fastened to the ends of straps 60 by suitable means, such as stitching. Female buckles 74 preferably lie in matching depressions 274 when buckles 70 are closed. Straps 60 are preferably fastened to modules 120 and 220 with fasteners 190, which are described in more detail below in connection with Fig. 1A. Preferably, an amount of melted silicone is applied to the barbs of fasteners 190 before installation to help secure fasteners 190 in the foam of modules 120 and 220. Additionally, straps 60 are preferably installed in depressions 160 and 260 which are formed about the exterior of modules 120 and 220, respectively, as more clearly shown in Fig. 8. Case 20 preferably has a handle 50, which is described in more detail below in connection with Figs. 9 and 9A, and depressions 150 and 250 formed in modules 120 and 220, respectively, to assist in opening case 20. Case 20 may also be provided with a gripping area 122 comprising a series of ribs formed in exterior portions of modules 120 and 220 to assist in carrying case 20, which is especially useful if a handle 50 is not provided.

As shown in Figs. 2, 3, and 13, modules 120 and 220 preferably comprise a plurality of compartments 22 integrally formed in the interior of modules 120 and 220 separated by partitions 14. Partitions 14 preferably have a thickness  $T_P$  of about 8 mm, as shown in Fig. 4. Compartments 22, which may be of varying sizes, are covered with lids 30 that are installed with hinges 40, preferably along the perimeter of modules 120 and 220. Lids 30 are preferably made of polystyrene plastic, with a suitable amount of rubber added for flexibility, about 2 mm thick. As illustrated in Figs. 10 and 12, lids 30 preferably comprise closure tabs 32 having a width  $W_T$  of about 20 mm and

nibs 32a that engage in corresponding slots formed in partitions 14. Nibs 32a and the corresponding slots in partitions 14 should be of sufficient size to hold lids 30 securely in place. For example, an engagement depth  $D_N$  (Fig. 10) of about 1.5 mm is satisfactory under most conditions. Partitions 14 are preferably chamfered as at 14a in Fig. 10 to assist in opening and closing lids 30. As shown in Fig. 13 (in which handle 50 is not shown for clarity), partitions 14 preferably have thickened portions 230 at the locations where closure tabs 32 engage partitions 14. Thickened portions 230 preferably have a thickness  $T_{CT}$  of about 11 mm, as shown in Fig. 10. Additionally, finger depressions 24 are preferably formed in modules 120 and 220 at the intersections of partitions 14 to assist in opening lids 30, as detailed in Figs. 11A and 11B. Finger depressions 24 should be of sufficient size to enable a user to slip a finger underneath the edge of lids 30 for easy opening. For example, a depth  $D_F$  (Fig. 11B) of about 8 mm is advantageous.

As shown in Fig. 8, modules 120 and 220 are preferably connected with a pair of hinges 80, which are installed with fasteners 90. Hinge 80, which is shown in greater detail in Figs. 5A and 5A-2, is preferably made of polyamide plastic and has holes 82 for receiving fasteners 90. In the vicinity of holes 82, the thickness  $T_1$  of hinge 80 is preferably about 2 mm. Hinge 80 preferably narrows in region 86 to a thickness  $T_2$  of about 0.43 mm and further narrows in region 88 to a thickness  $T_3$  of about 0.33 mm. Surface 84 of hinge 80 mounts against modules 120 and 220, and surface 85 of hinge 80 faces outward. Hinges 80 preferably mount in like-shaped recesses on the exterior of modules 120 and 220. It should be understood that the foregoing dimensions are desirable for purposes of durability but are not limiting for this invention.

As seen in Figs. 5B and 8, straps 60 preferably overlie hinges 80, and fasteners 90 secure straps 60 and hinges 80 to modules 120 and

220. Referring to Fig. 5A-1, fasteners 90, which are preferably made of polyamide plastic, have a head 92 and a shaft 94 with barbs 96 slanted toward head 92. Head 92 preferably has a diameter  $D_H$  of about 13.5 mm. Shaft 94 preferably has a length  $L_1$  of about 17 mm and a diameter  $D_s$  of about 6.3 mm. The outer diameter  $D_B$  of barbs 96 is preferably about 7.5 mm. Preferably, an amount of melted silicone is applied to the barbs of fasteners 90 before installation to help secure fasteners 90 in the foam of modules 120 and 220. Referring to Fig. 5B, at the hinge locations, the wall thickness  $T_{CH}$  of modules 120 and 220 is preferably about 22 mm. As shown in Fig. 8, the thickness  $T_{sw}$  of the side walls of modules 120 and 220 is preferably about 20 mm, and the thickness  $T_B$  of the bottom walls of modules 120 and 220 is preferably about 10 mm (also shown in Fig. 7). Again, it should be understood that the dimensions referenced herein are preferred but are not limiting for this invention.

As shown in Fig. 1A, fasteners 190 are similar to fasteners 90, except that fasteners 190 are shorter and have a blunt tip for use with relatively thin foam material. Specifically, fasteners 190, which are also preferably made of polyamide plastic, have a head 192 and a shaft 194 with barbs 196 slanted toward head 192. Dimensions  $D_H$ ,  $D_s$ , and  $D_B$  are preferably the same as discussed above for fasteners 90, and length  $L_2$  is preferably about 9 mm.

Referring to Figs. 4, 5B, and 8, module 120 preferably has an integral protrusion 124 around its perimeter that mates with recess 224 on module 220 to create a watertight seal when case 20 is closed. The watertight seal is effective to a depth of about 50 cm when kit 10 is submersed in water. To enhance such seal, protrusion 124 is preferably slightly larger than recess 224. A preferred nominal radius for protrusion 124 and recess 224 is about 1.5 mm. Alternatively, an O-ring could be used.



Referring to Figs. 2, 3 and 13, partitions 14 of modules 120 and 220 preferably have a plurality of ribs 26 such that, when case 20 is closed, the ribs 26 of module 120 align with and butt up against the ribs 26 of module 220 to provide lateral support and help prevent collapse of case 20. Ribs 26 also serve to hold lids 30 in place.

Figure 6 shows a preferred lid hinge 40 for installing lids 30. Hinge 40 is preferably made of polyacetal plastic and has a generally planar tab 42 for insertion into corresponding slots in modules 120 and 220, with chamfers 42a for assisting such insertion. Tab 42 of hinge 40 preferably has at least one rib 44 extending laterally from tab 42 to help secure tab 42 within the corresponding slots in modules 120 and 220. Hinge 40 has a pair of cylindrical bosses 46, each of which has an outwardly facing cylindrical recess 48. As shown in Fig. 12, lid 30 has a pair of cylindrical hinge pins 36 which face each other on either side of slot 38. Lid 30 is installed by squeezing bosses 46 of hinge 40 toward one another sufficiently to allow insertion of hinge pins 36 into recesses 48. Alternatively, the hinge pins may be on lid hinge 40 and the cylindrical recesses may be on lid 30.

Referring to Figs. 4 and 13, the side walls of modules 120 and 220 are preferably provided with thickened areas 140 and 240, respectively, at the locations where lid hinges 40 are installed. For example, a thickness  $T_{LH}$  of about 23 mm is preferred. As shown in Fig. 7, thickened area 140 has a rectangular slot 142 for receiving tab 42 of lid hinge 40. Slot 142 is preferably slightly undersized with respect to tab 42 such that tab 42 must be forced into slot 142. Ribs 44 also help to secure tab 42 of hinge 40 in slot 142, and melted silicone or a suitable adhesive may also be used to further secure hinge 40 in place. Hinges 40 are similarly installed in modules 120 and 220. It should be noted that hinges 40 are preferably installed about the perimeter of modules 120 and 220 such that lids 30 open outward to

avoid concealing an adjacent compartment when a lid 30 is opened. In this manner, all compartments 22 may be accessed simultaneously, if desired.

Turning now to Fig. 3, each compartment 22 is preferably  
5 dedicated to hold medical supplies for a particular type of medical emergency as identified by indicia 310-400 on the top of each lid 30. Indicia 310-400 preferably comprise simple but eye-catching graphics that enable an unskilled person quickly to ascertain the purpose of the medical supplies within each compartment 22. More preferably,  
10 indicia 310-400 are also color-coded, the graphics on each lid 30 being a different color. Even more preferably, the various medical emergencies that the contents of each compartment 22 are used to treat are prioritized in order of life threatening severity, and lids 30 are numbered accordingly. Likewise, the bottom side of each lid 30  
15 preferably bears instructions regarding the proper use of the contents of that particular compartment 22 to treat the particular medical emergency. Figures 15 through 24 are examples of preferred indicia for the tops (indicated by the letter "T" for "top") and bottoms (indicated by the letter "B" for "bottom") of lids 30.

20 As illustrated in Figs. 9, 9A, and 9B, handle 50 is preferably fastened to module 220 of case 20 by means of unique snap-in fasteners 110 in cooperation with special probes 54 on handle 50. Each leg of handle 50, which is preferably made of polyamide plastic, has a collar 55, a stem 52, and a truncated conical probe 54 extending from a  
25 conical support section 58. Fastener 110, which is also preferably made of polyamide plastic, has a cylinder 114 extending from a base 112. At the end of cylinder 114 opposite base 112, fastener 110 has a set of prongs 116 extending into the interior of cylinder 114. Prongs 116 extend from cylinder 114 in a conical arrangement to match probe  
30 54 of handle 50. Although any desired number of prongs 116 may be

employed, a set of three prongs 116 of roughly equal arclength is preferred. Thickness  $T_H$  of the wall of module 220 is preferably about 20 mm in the vicinity of handle 50. To install handle 50, stem 52 is inserted into a hole 218 from the exterior of a wall of module 220 until collar 55 is flush with module 220. Then, as fastener 110 is pressed into hole 218 from the interior side of the wall of module 220, probe 54 of handle 50 engages prongs 116 of fastener 110. As fastener 110 is pressed onto probe 54, prongs 116 flex outward until catch 56 of probe 54 moves past tips 118 of prongs 116. At that point, prongs 116 snap back to their initial position and engage conical support section 58, and catch 56 holds fastener 110 in place. To allow such installation, fastener 110 and stem 52 are sized such that a slight gap, preferably about 1 mm, exists between the end of fastener 110 and stem 52 in the installed position.

Figure 14 illustrates a preferred method of making the holes in kit 10 necessary to install handle 50. Kit 10 is preferably immobilized in a jig (not shown), and a template 500 having predrilled holes 502 at the desired fastener locations is placed adjacent kit 10. A tool 510 having a set of rods 512 is used to make the necessary holes by heating rods 512, preferably by an electrical connection 514 to a source of electricity (not shown); aligning rods 512 with predrilled holes 502; and inserting heated rods 512 through holes 502 and the foam wall of kit 10. For a kit 10 made of EPP, rods 512 should be heated to between about 120° C and about 130° C. Recesses for installing barbed fasteners 90 and 190 may be made in like manner, except that heated rods 512 are inserted into the foam of kit 10 only to a predetermined depth rather than completely through the foam.

It will be appreciated that barbed fasteners 90 and 190 and snap-in fastener 110 may be used to fasten any of a variety of items to a foam product. Such items may include handles, hinges, knobs,

straps, placards, and the like, or even other foam products. Any such item to be fastened to a foam product is referred to herein as an accessory.

One of the attractive features of first aid kit 10 is that its mass and volume combination make it buoyant in water, even when compartments 22 are filled with a preferred set of medical supplies, which are listed in Table 1. By way of example, a preferred embodiment as described herein has exterior dimensions of about 335 mm  $\times$  328 mm  $\times$  118 mm for an overall volume of about 13,000 cm<sup>3</sup> and an empty mass of about 870 grams. As shown in Figs. 4, 7, and 13, compartments 22 preferably have a length L<sub>C</sub> of about 140 mm and a depth D<sub>C</sub> of about 45 mm. The large compartments preferably have a width W<sub>LC</sub> of about 140 mm, and the small compartments preferably have a width W<sub>SC</sub> of about 66 mm. With a total mass of about 2000 grams when full of medical supplies, the overall density is about 0.15 grams/cm<sup>3</sup>, which is less than that of water (1.0 gram/cm<sup>3</sup>), thereby making kit 10 buoyant in water. Furthermore, the buoyancy of kit 10 is sufficient to float a mass of 5 kg in water. As the average mass of a human head is about 5 kg, kit 10 is capable of being used as a personal flotation device to help a person keep his or her head above water and thereby avoid drowning. Persons reasonably skilled in the art will appreciate that the dimensions, materials, and contents of kit 10 may be varied as necessary to achieve a desired level of buoyancy.

Although the foregoing specific details describe a preferred embodiment of this invention, persons reasonably skilled in the art will recognize that various changes may be made in the details of the apparatus of this invention without departing from the spirit and scope of the invention as defined in the appended claims. Therefore, it should be understood that this invention is not to be limited to the specific details shown and described herein.

TABLE 1

## Preferred Contents

Seq. No	Item Description	Qty. per kit
1	Activated Charcoal	1 oz. bottle
2	Adhesive Tape 1/2 " x 5 yd waterproof	1 roll
3	Ammonia Inhalants	3 ampules
4	Burn-Jel 3.5 gr-1/8 oz. from Water Jel (pain relieving gel)	2 foils
5	Butterfly adhesive closures	5 individual
6	BZK Antiseptic towelettes	13 foiled pkgs.
7	Cetafen non-aspirin (acetaminophen pkts of 2 ea.)	10 foils w/ 2 ea.
8	Cold pack (small) in unit box	2 individual pkgs.
9	Cotton tip applicator 3" (eye swabs)	4 swabs
10	CPR Micromask kit (collapsible mask, pair latex gloves, 1-way valve)	1 nylon pouch
11	Elastic bandage 3" Roll	1 individual wrap
12	Elastic patch large cloth bandage 2 x 3 in	4 individual
13	Electrotab Electrolyte tablets (2 per packet)	6 foils w/ 2 ea.
14	Eye cups , non sterile, plastic.	1 individual
15	Eye Pads, dressings (4 w/ adhesive tape strips in unit packet)	1 individual box
16	Eye wash 1/2 oz., sterile	2 bottles
17	Fingertip Bandage 1-3/4" x 2"	3 individual
18	Forceps first aid kit type tweezers 4"	1 individual
19	Gloves, non-sterile latex (1 pair in bag)	1 pair (medium size)
20	Insect sting relief medicated pads	3 foil pkgs.
21	Insta-Glucose for insulin reactions (Dextrose 43%, liquid)	1 individual tube
22	Ipecac (Syrup, 1 oz. bottle)	1 bottle
23	Knuckle Bandage (medium size)	3 individual
24	Non- adherent pads 2 x 3 in	10 individuals
25	Penlight with pupil gauge (disposable)	1 individual
26	Plastic strips 1 x 3 in (band-aids)	20 individual
27	Pressure Pad Compress 5 x 6 in. (extra absorbent pad + rollerbandage)	1 blood stopper
28	Rescue Blanket unit box (thermal blanket 56" x 84")	1 individual
29	Scissors 4" First aid type w/ blunt ends	1 individual
30	Triangle Bandages Muslin 40 x 40 x 56 in.	2 in poly bag individual
31	Triple Antibiotic ointment (foil packets)	10 individual pkgs.
32	Venom Extractor + (4 cups, different sizes, razor & tourniquet)	1 kit
33	Water Jel burn dressing 2" x 6" (sterile)	2 foils

CLAIMS

I claim:

1. A first aid kit, comprising:

5 a case comprised of EPP foam having a density greater than 60 grams/liter, said case having a plurality of compartments;

a plurality of lids respectively covering said plurality of compartments wherein each of said plurality of lids identifies a particular medical emergency, the particular medical emergency on each of said plurality of lids being different and being prioritized according to severity by ordered positional placement within said case; and

medical supplies selectively contained within each of said plurality of compartments for treating the particular medical emergency respectively identified on each of said plurality of lids.

- 15 2. The first aid kit of claim 1 wherein each of said plurality of lids has a bottom side bearing instructions concerning the use of said medical supplies for treating the particular medical emergency respectively identified on each of said plurality of lids.

3. A first aid kit, comprising:

20 a case comprised of EPP foam having a density greater than 60 grams/liter, said case having a plurality of compartments;

a plurality of lids respectively covering said plurality of compartments wherein each of said plurality of lids bears a graphical illustration of a particular medical emergency, the particular medical emergency on each of said plurality of lids being different; and

25 medical supplies selectively contained within each of said plurality of compartments for treating the particular medical emergency respectively illustrated on each of said plurality of lids.

4. The first aid kit of claim 3 wherein each of said plurality of lids has a bottom side bearing instructions concerning the use of said
- 30

medical supplies for treating the particular medical emergency respectively illustrated on each of said plurality of lids.

5. A first aid kit, comprising:

a case comprised of foam, said case having a plurality of  
5 compartments, each of said plurality of compartments having a slot for receiving a lid hinge;

a plurality of lid hinges, each of said hinges having a generally planar tab with at least one rib thereon and a pair of bosses extending from said tab, each of said bosses having a generally cylindrical recess,  
10 said at least one rib on said tab of each of said lid hinges being disposed within said slot of each respective compartment;

a plurality of lids respectively covering said plurality of compartments wherein each of said plurality of lids identifies a particular medical emergency, the particular medical emergency on  
15 each of said plurality of lids being different, each of said plurality of lids having a pair of generally cylindrical hinge pins respectively disposed within said recesses of said pair of bosses of each respective lid hinge; and

medical supplies selectively contained within each of said  
20 plurality of compartments for treating the particular medical emergency respectively identified on each of said plurality of lids.

6. The first aid kit of claim 5 wherein each of said plurality of lids has a bottom side bearing instructions concerning the use of said medical supplies for treating the particular medical emergency  
25 respectively identified on each of said plurality of lids.

7. A first aid kit, comprising:

a case comprised of foam, said case having a plurality of compartments, each of said plurality of compartments having a slot for receiving a lid hinge;

a plurality of lid hinges, each of said plurality of lid hinges having a generally planar tab with at least one rib thereon and a pair of generally cylindrical hinge pins extending from said tab, said at least one rib on said tab of each of said plurality of lid hinges being  
5 disposed within said slot of each respective compartment;

a plurality of lids respectively covering said plurality of compartments wherein each of said plurality of lids identifies a particular medical emergency, the particular medical emergency on each of said plurality of lids being different, each of said plurality of  
10 lids having a pair of bosses with a respective pair of generally cylindrical recesses, wherein said pair of hinge pins is respectively disposed within said recesses of said pair of bosses of each respective lid hinge; and

medical supplies selectively contained within each of said  
15 plurality of compartments for treating the particular medical emergency respectively identified on each of said plurality of lids.

8. The first aid kit of claim 7 wherein each of said plurality of lids has a bottom side bearing instructions concerning the use of said medical supplies for treating the particular medical emergency  
20 respectively identified on each of said plurality of lids.

9. A first aid kit, comprising:

a case comprised of foam, said case having an exterior wall and a plurality of internal compartments containing medical supplies for treating selected medical emergencies;

25 a handle having at least one probe traversing through said exterior wall of said case, said at least one probe having a catch for engaging a snap-in fastener; and

at least one snap-in fastener having at least one prong engaged with said catch of said at least one probe to fasten said handle to said  
30 exterior wall of said case.



10. A first aid kit, comprising:

a first case module comprised of foam and having at least one compartment containing medical supplies for treating a selected medical emergency;

5 a second case module comprised of foam and having at least one compartment containing medical supplies for treating a selected medical emergency; and

at least one case hinge connecting said first case module and said second case module, said case hinge being fastened to said first  
10 and second case modules with fasteners having a plurality of barbs embedded within said foam of said first and second case modules.

11. A first aid kit, comprising:

a first case module comprised of foam, said first case module having at least one compartment containing medical supplies for  
15 treating a selected medical emergency and a peripheral protrusion having a semicircular cross-sectional shape with a radius of at least 1.5 mm; and

a second case module comprised of foam, said second case module having at least one compartment containing medical supplies  
20 for treating a selected medical emergency and a peripheral recess having a semicircular cross-sectional shape with a radius of at least 1.5 mm;

wherein said peripheral protrusion mates with said peripheral recess to form a watertight seal.

25 12. A first aid kit, comprising:

a first case module comprised of foam and having at least one compartment containing medical supplies for treating a selected medical emergency;

a second case module comprised of foam and having at least one compartment containing medical supplies for treating a selected medical emergency; and

at least one strap connecting said first case module and said  
5 second case module, said at least one strap being fastened to said first and second case modules with fasteners having a plurality of barbs embedded within said foam of said first and second case modules.

13. The first aid kit of claim 12 wherein said at least one strap has a  
10 first end and a second end, said kit further comprising at least one buckle joining said first and second ends of said at least one strap to hold said first and second case modules together.

14. A first aid kit comprising a case comprised of foam, said case  
15 having at least one compartment containing medical supplies for treating a selected medical emergency, wherein said kit is buoyant in water.

15. The first aid kit of claim 14 wherein said kit is capable of  
serving as a personal flotation device.

16. A first aid kit, comprising:

a first case module comprised of EPP foam having a density  
20 greater than 60 grams/liter, said first case module having at least one compartment;

a second case module comprised of EPP foam having a density  
greater than 60 grams/liter, said second case module having at least  
one compartment;

25 a plurality of lids respectively covering said at least one compartment of said first and second case modules wherein each of said plurality of lids identifies a particular medical emergency, the particular medical emergency on each of said plurality of lids being different and being prioritized according to severity by ordered  
30 positional placement within said first and second case modules; and

medical supplies selectively contained within said at least one compartment of said first and second case modules for treating the particular medical emergency respectively identified on each of said plurality of lids.

5 17. The first aid kit of claim 16 wherein each of said plurality of lids has a bottom side bearing instructions concerning the use of said medical supplies for treating the particular medical emergency respectively identified on each of said plurality of lids.

10 18. The first aid kit of claim 16 wherein each of said plurality of lids bears a graphical illustration of the particular medical emergency respectively identified on each of said plurality of lids.

19. The first aid kit of claim 16 further comprising:

15 a plurality of lid hinges, each of said plurality of lid hinges having a generally planar tab with at least one rib thereon and a pair of bosses extending from said tab, each of said bosses having a generally cylindrical recess;

20 wherein said at least one compartment of said first and second case modules has a slot for receiving a lid hinge, said at least one rib on said tab of each of said plurality of lid hinges being respectively disposed within said slot of said at least one compartment of said first and second case modules; and

wherein each of said plurality of lids comprises a pair of generally cylindrical hinge pins respectively disposed within said recesses of said pair of bosses of each respective lid hinge.

25 20. The first aid kit of claim 16 further comprising:

a plurality of lid hinges, each of said plurality of lid hinges having a generally planar tab with at least one rib thereon and a pair of generally cylindrical hinge pins extending from said tab;

30 wherein said at least one compartment of said first and second case modules has a slot for receiving a lid hinge, said at least one rib

on said tab of each of said plurality of lid hinges being respectively disposed within said slot of said at least one compartment of said first and second case modules; and

wherein each of said plurality of lids comprises a pair of bosses,  
5 each of said bosses having a generally cylindrical recess, wherein said hinge pins are respectively disposed within said recesses of said pair of bosses of each respective lid.

21. The first aid kit of claim 16 wherein at least one of said first and second case modules comprises an exterior wall for receiving a handle,  
10 said kit further comprising:

a handle having at least one probe traversing through said exterior wall of said case, said at least one probe having a catch for engaging a snap-in fastener; and

at least one snap-in fastener having at least one prong engaged  
15 with said catch of said at least one probe to fasten said handle to said exterior wall.

22. The first aid kit of claim 16 further comprising at least one case hinge connecting said first case module and said second case module, said case hinge being fastened to said first and second case modules  
20 with fasteners having a plurality of barbs embedded within said foam of said first and second case modules.

23. The first aid kit of claim 16 wherein:

one of said first and second case modules has a peripheral protrusion having a semicircular cross-sectional shape with a radius of  
25 at least 1.5 mm;

the other of said first and second case modules has a peripheral recess having a semicircular cross-sectional shape with a radius of at least 1.5 mm; and

said peripheral protrusion mates with said peripheral recess to  
30 form a watertight seal.

24. The first aid kit of claim 16 wherein said kit is buoyant in water.

25. The first aid kit of claim 24 wherein said kit is capable of serving as a personal flotation device.

26. A first aid kit, comprising:

5 a first case module and a second case module, each of said modules comprised of foam, said first and second case modules having a plurality of compartments, each of said plurality of compartments having a slot for receiving a lid hinge, at least one of said first and second case modules having an exterior wall for receiving a handle;

10 at least one case hinge connecting said first case module and said second case module, said case hinge being fastened to said first and second case modules with fasteners having a plurality of barbs embedded within said foam of said first and second case modules;

a plurality of lid hinges, each of said plurality of lid hinges  
15 having a generally planar tab with at least one rib thereon and a pair of bosses extending from said tab, each of said bosses having a generally cylindrical recess, said at least one rib on said tab of each of said lid hinges being respectively disposed within said slot of each respective compartment;

20 a plurality of lids respectively covering said plurality of compartments wherein each of said plurality of lids bears a graphical illustration identifying a particular medical emergency, the particular medical emergency on each of said plurality of lids being different and being prioritized according to severity by ordered positional placement  
25 within said first and second case modules, each of said plurality of lids having a pair of generally cylindrical hinge pins respectively disposed within said recesses of said pair of bosses of each respective lid hinge;

a handle having at least one probe traversing through said exterior wall, said at least one probe having a catch for engaging a  
30 snap-in fastener;

at least one snap-in fastener having at least one prong engaged with said catch of said at least one probe to fasten said handle to said exterior wall;

at least one strap connecting said first case module and said  
5 second case module, said at least one strap being fastened to said first and second case modules with fasteners having a plurality of barbs embedded within said foam of said first and second case modules; and

medical supplies selectively contained within said plurality of  
compartments for treating the particular medical emergency  
10 respectively identified on each of said plurality of lids.

27. The first aid kit of claim 26 wherein said foam is EPP having a density greater than 60 grams/liter.

28. The first aid kit of claim 27 wherein the density of said foam is about 80 grams/liter.

15 29. A fastener for securing an accessory to a foam product, said fastener comprising:

a generally planar head;

a shaft extending from said head; and

a plurality of barbs protruding from said shaft.

20 30. The fastener of claim 29 wherein said barbs are angled toward said head.

31. An apparatus for securing an accessory to a foam product, comprising:

a probe having a catch for engaging a snap-in fastener, said  
25 probe extending from said accessory; and

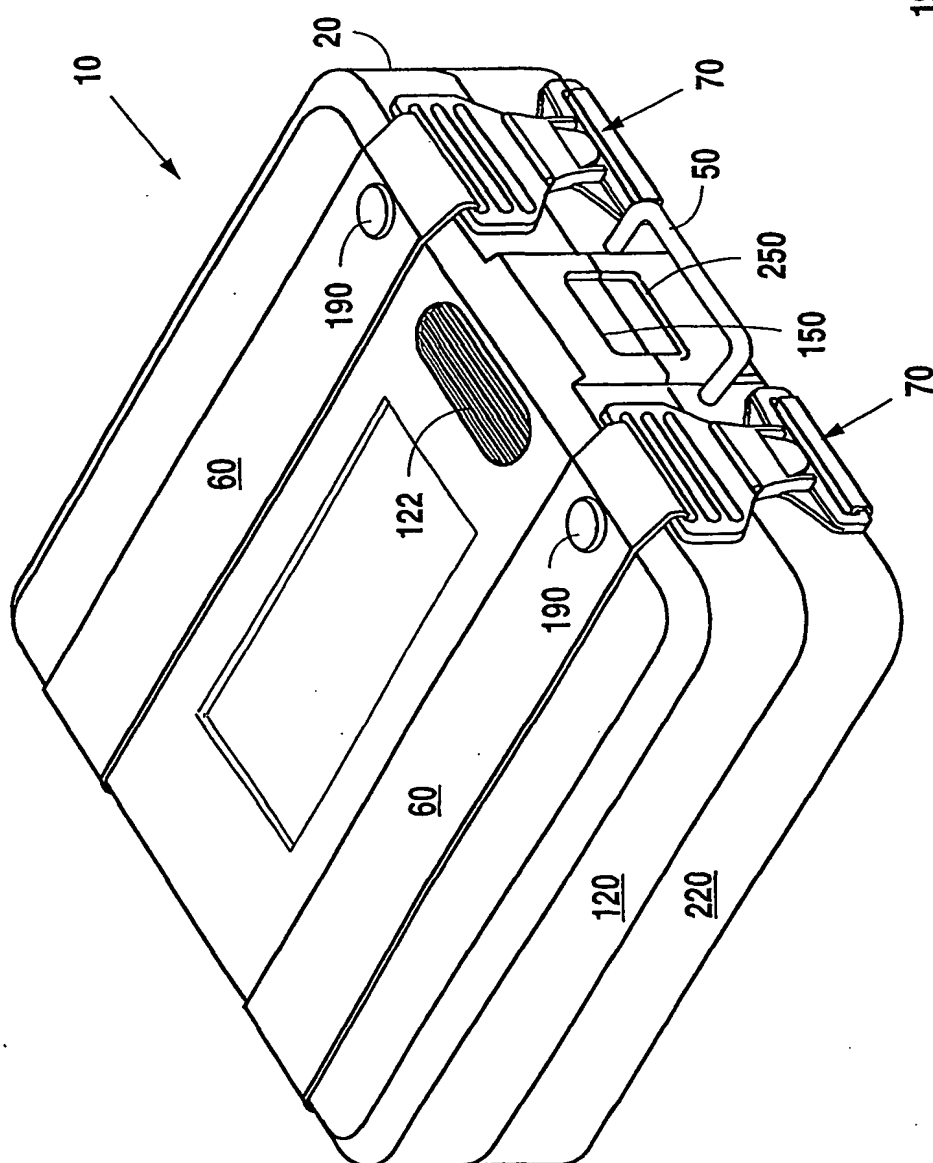
a snap-in fastener having at least one prong engaged with said catch of said probe to fasten said accessory to said foam product.

32. A method of securing an accessory to a foam product, said accessory having a hole for receiving a fastener, said method  
30 comprising the steps of:

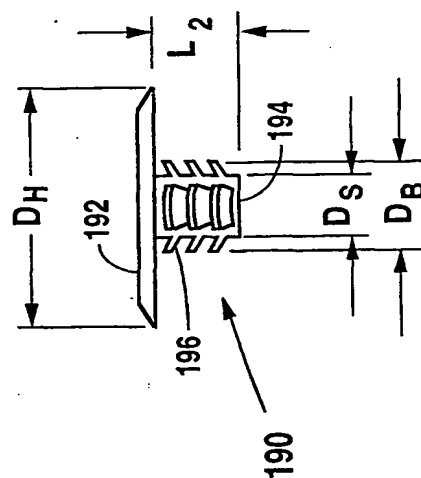
- heating a rod to a selected temperature;  
pressing said rod into said foam product to form a recess in said  
foam product;  
removing said rod from said foam product;  
5 positioning said accessory adjacent said foam product such that  
said hole is generally aligned with said recess; and  
inserting a fastener through said hole and into said recess, said  
fastener having a generally planar head, a shaft extending from said  
head, and a plurality of barbs protruding from said shaft, said  
10 plurality of barbs being engaged with said foam product to retain said  
fastener in said foam product and thereby fasten said accessory to said  
foam product.
33. The method of claim 32 further comprising the step of placing an  
amount of melted silicone on the plurality of barbs of said fastener  
15 before said inserting step.
34. The method of claim 32 wherein said foam product comprises  
EPP and said selected temperature is between about 120° C and about  
130° C.
35. A method of securing an accessory to a foam product, said  
20 method comprising the steps of:  
providing said accessory with a probe having a catch for  
engaging a snap-in fastener;  
heating a rod to a selected temperature;  
pressing said rod through said foam product to form a hole in  
25 said foam product;  
removing said rod from said foam product;  
inserting said probe through said hole in said foam product; and  
pressing a snap-in fastener into engagement with said probe,  
said snap-in fastener having at least one prong engaged with said  
30 catch of said probe to fasten said accessory to said foam product.

36. The method of claim 35 wherein said foam product comprises EPP and said selected temperature is between about 120° C and about 130° C.





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**Fig. 1A**



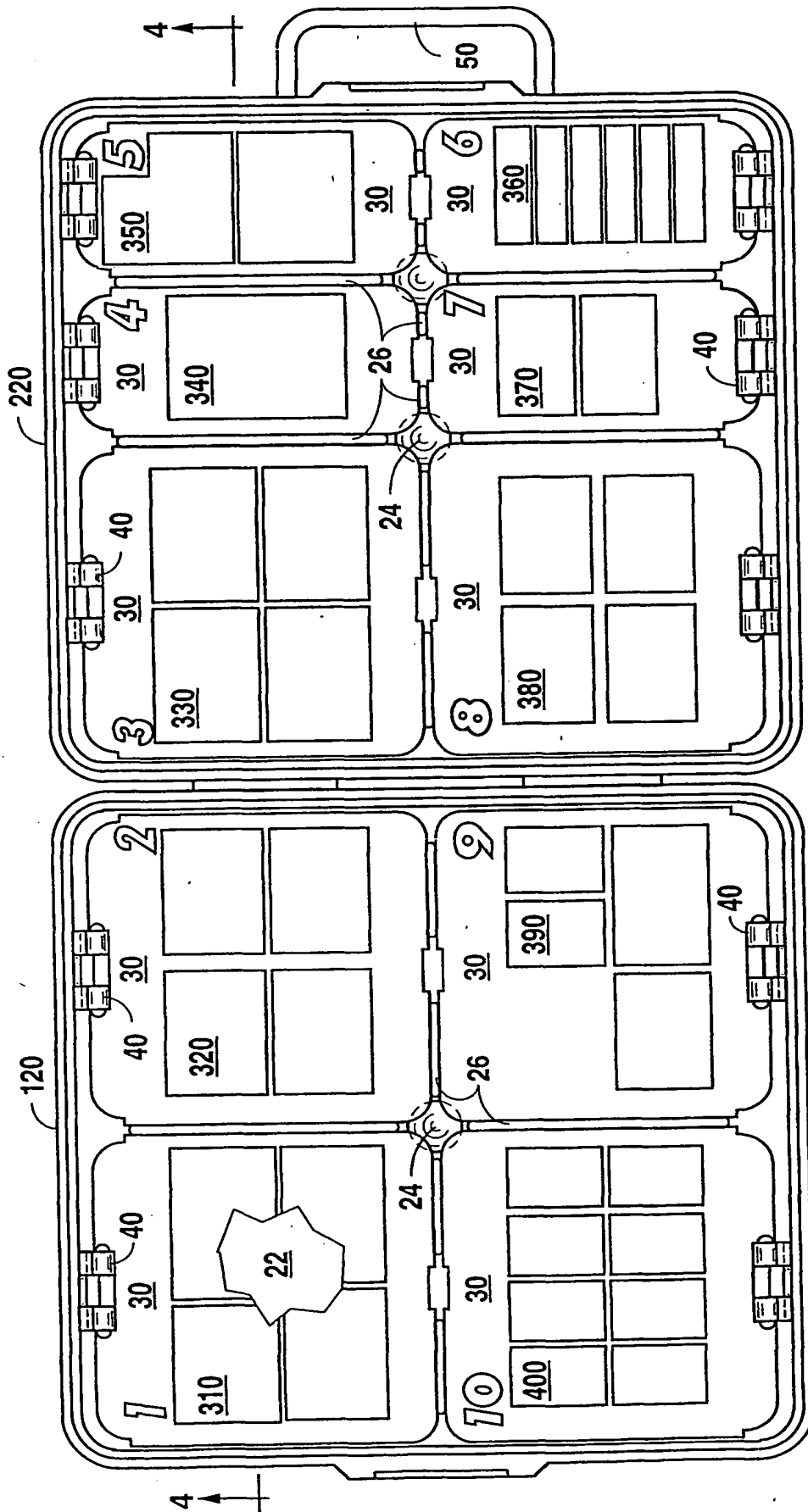
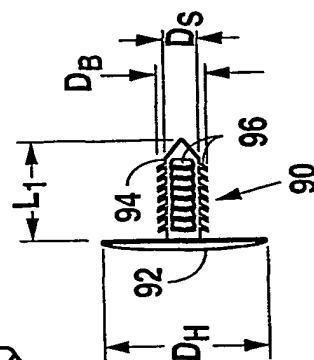
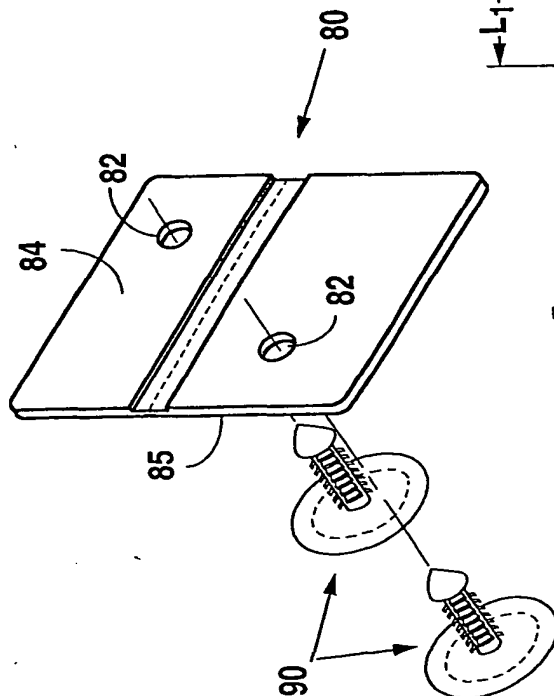
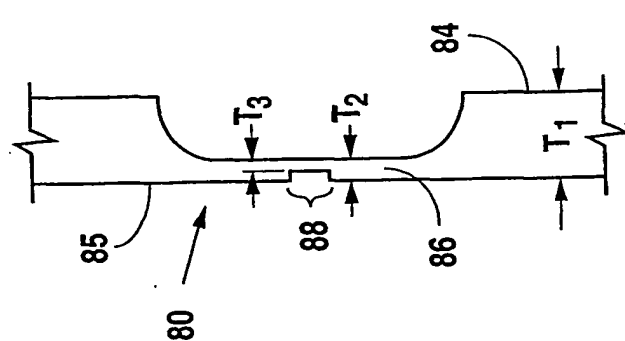
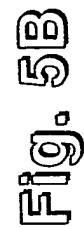
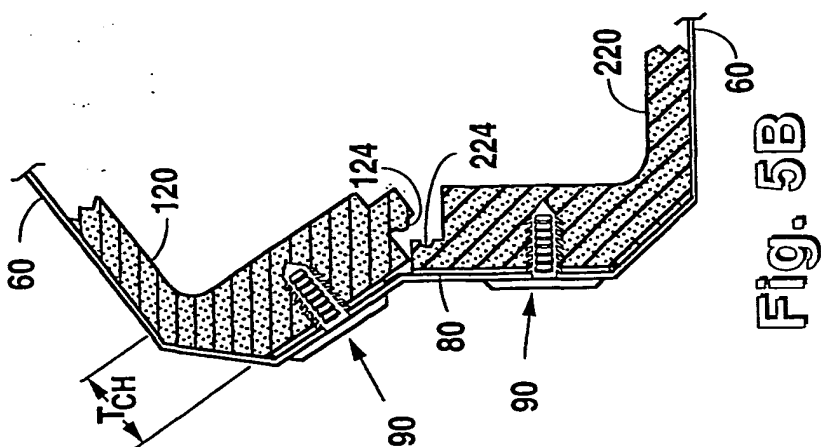
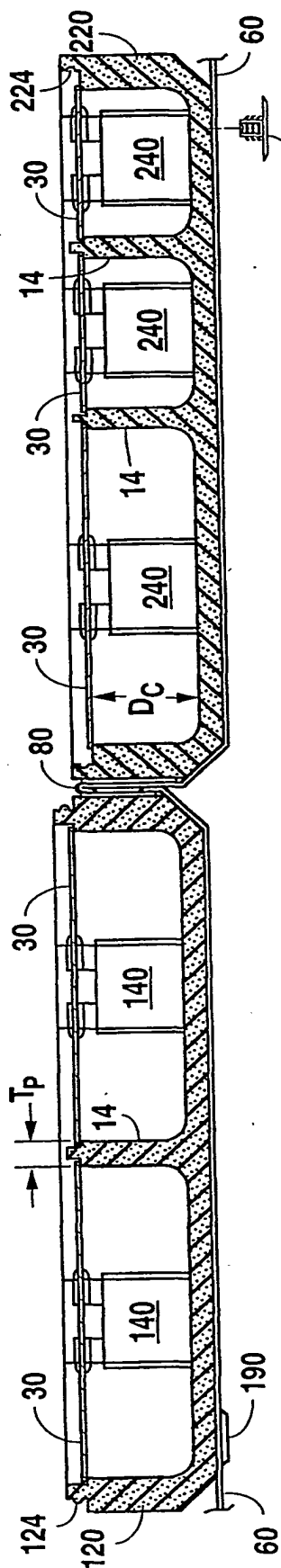
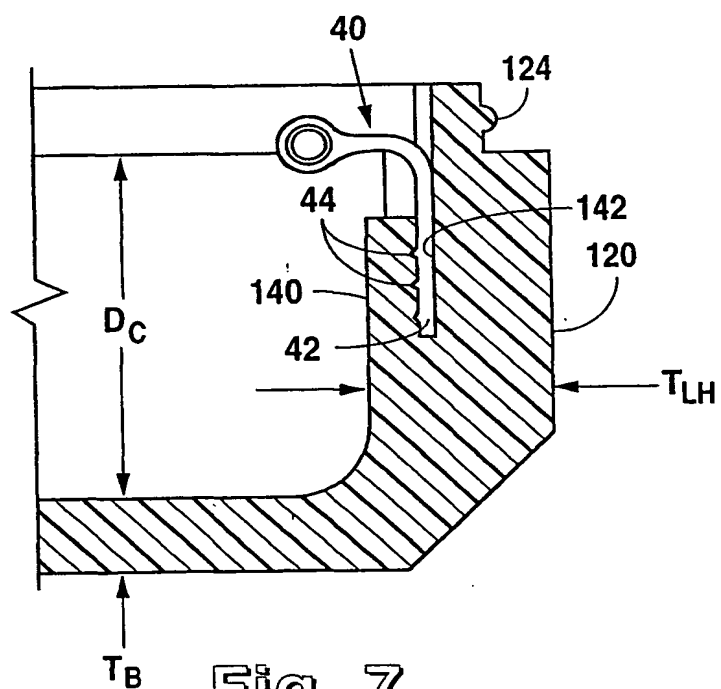
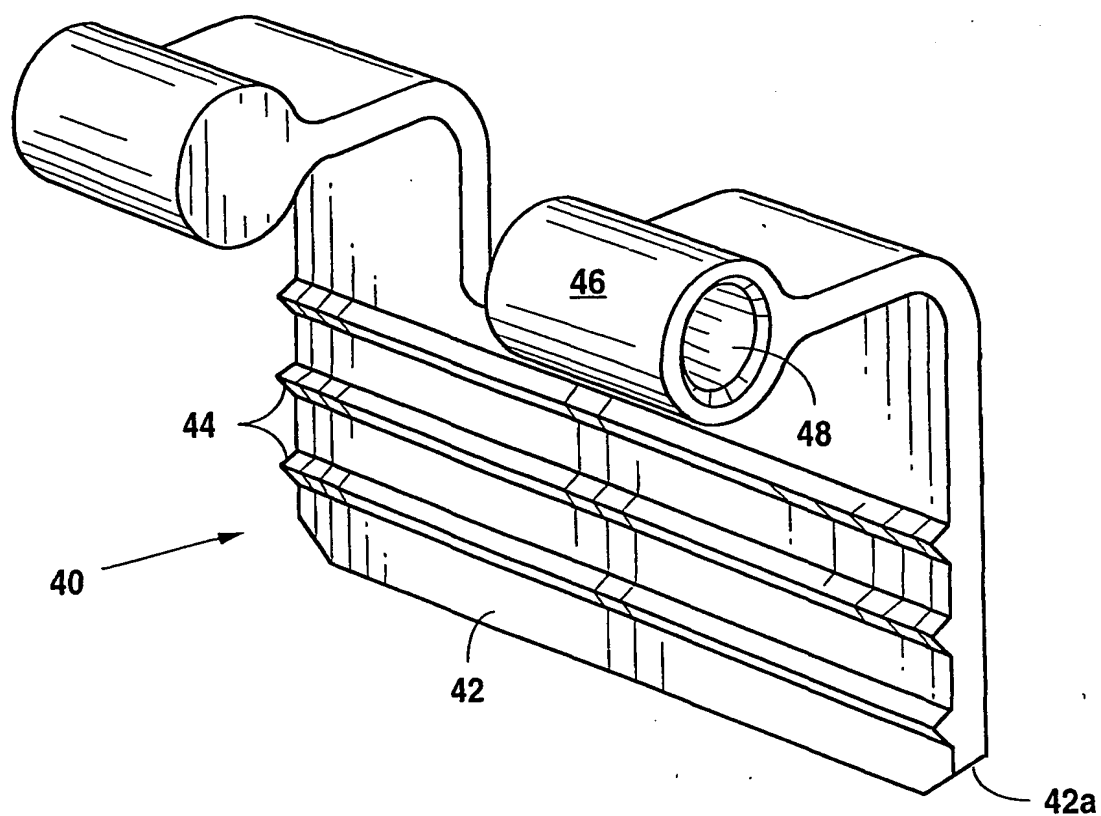


Fig. 3





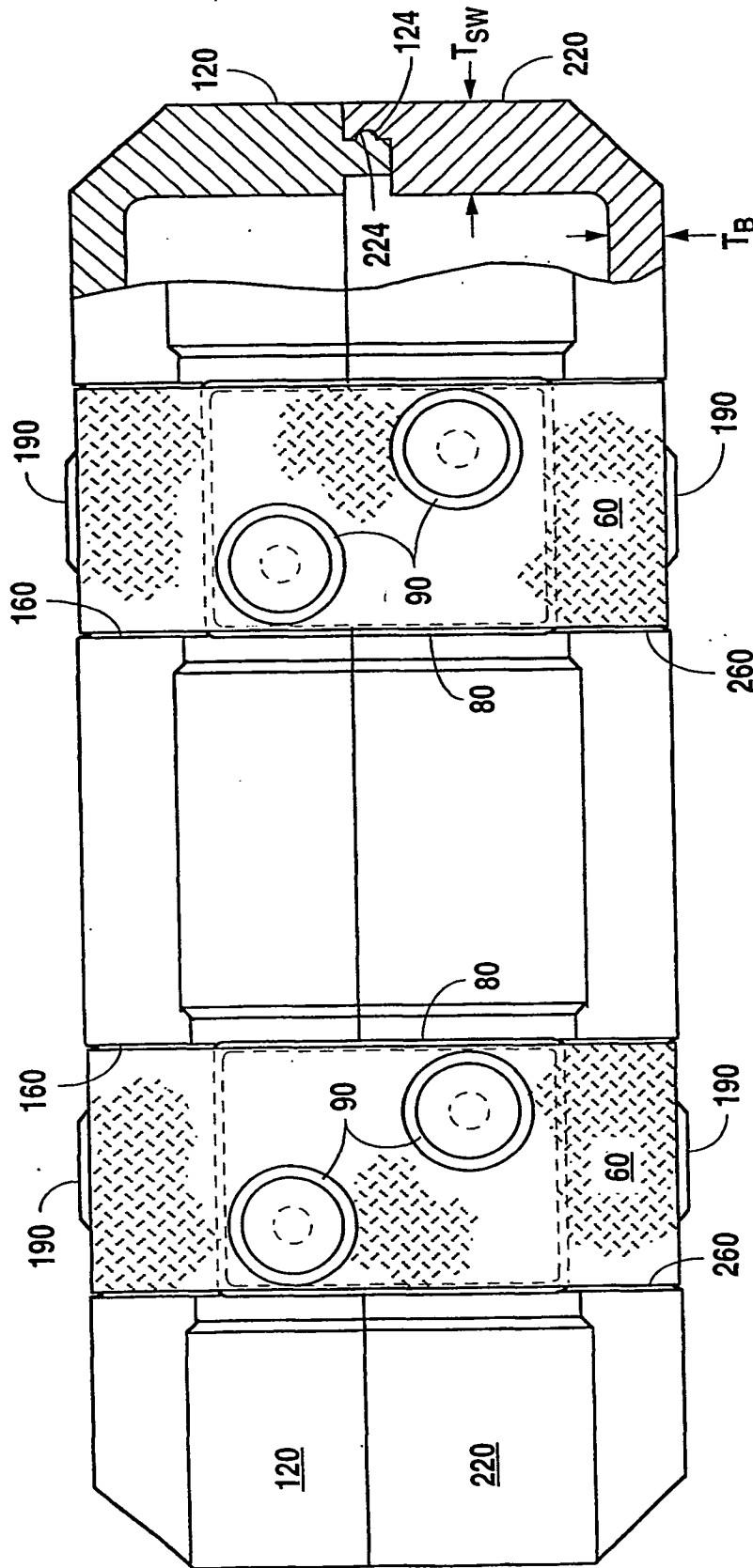


Fig. 8

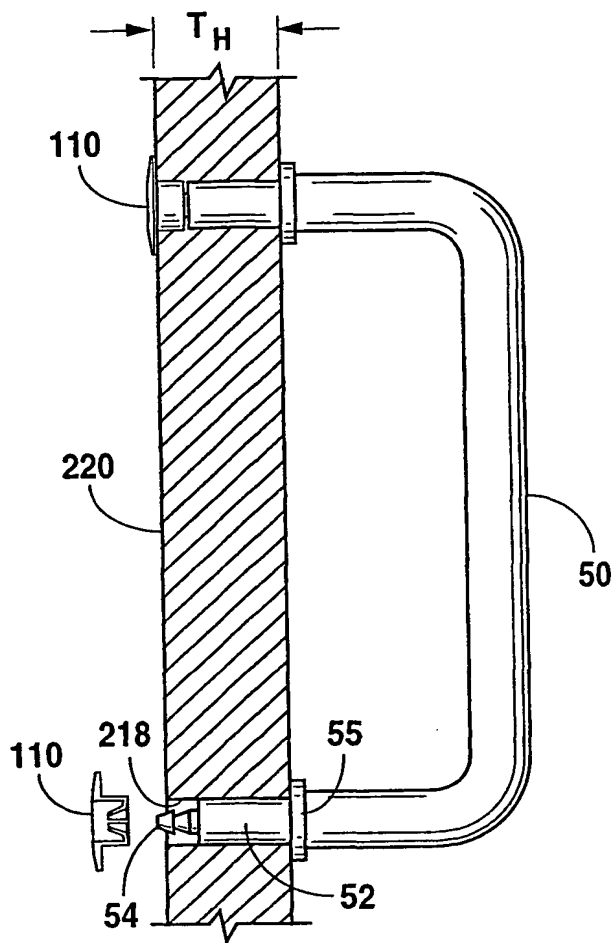


Fig. 9

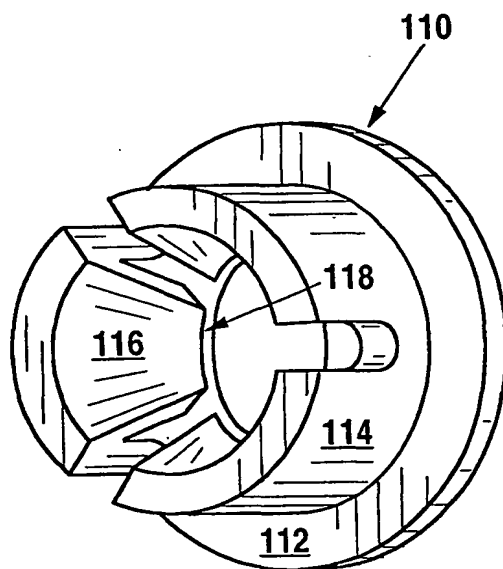


Fig. 9B

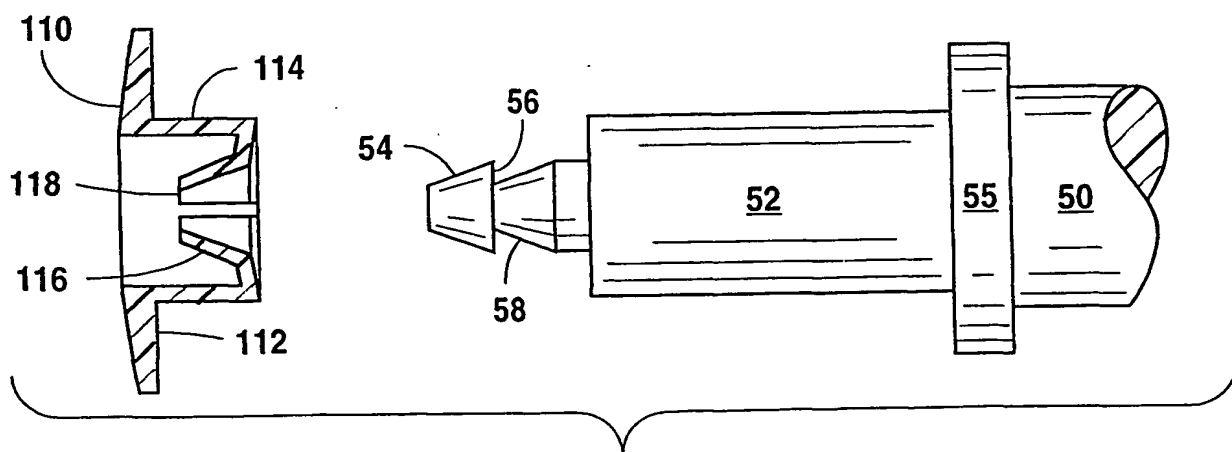


Fig. 9A

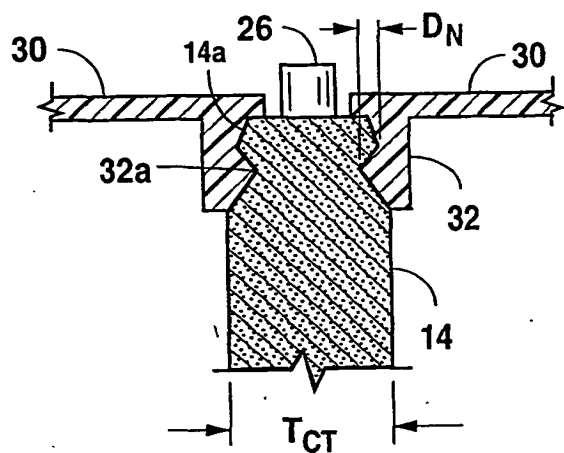


Fig. 10

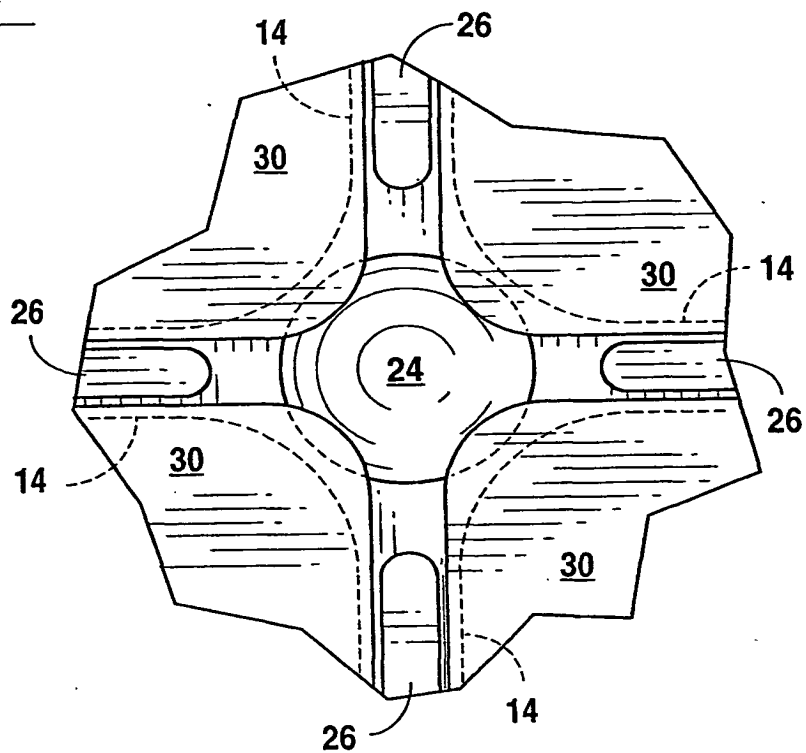


Fig. 11A

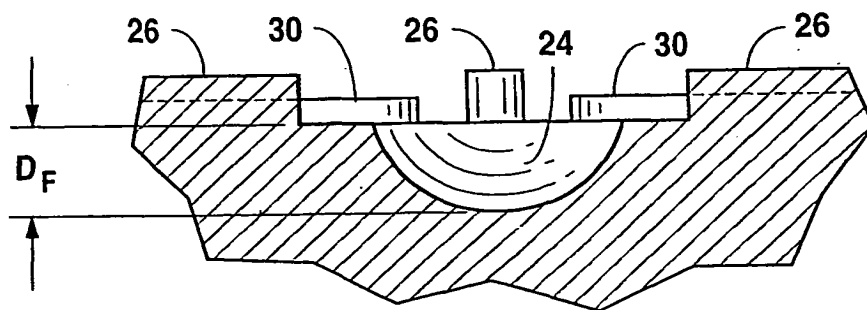


Fig. 11B



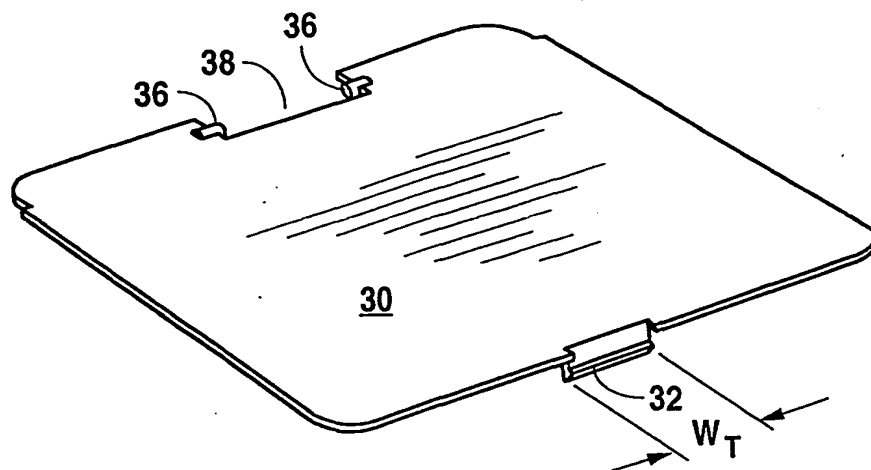


Fig. 12

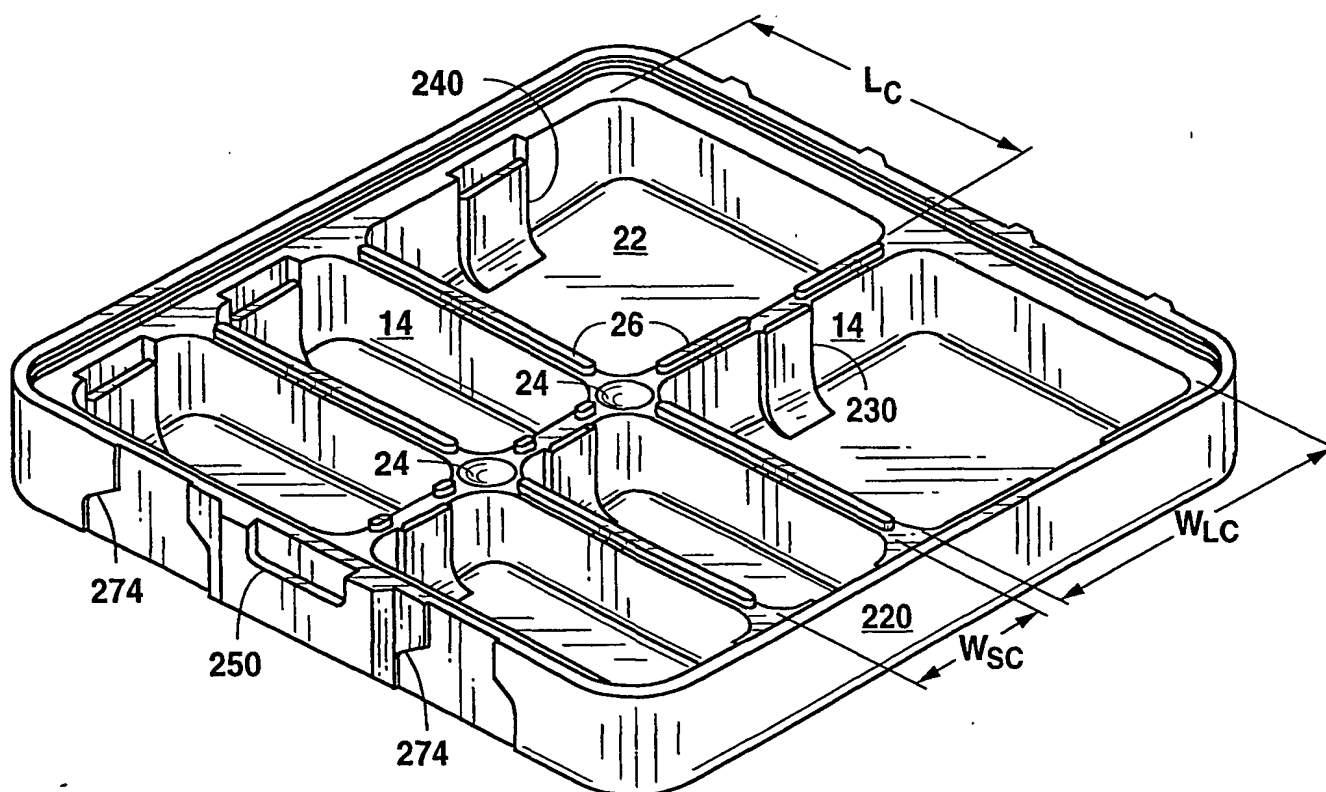


Fig. 13

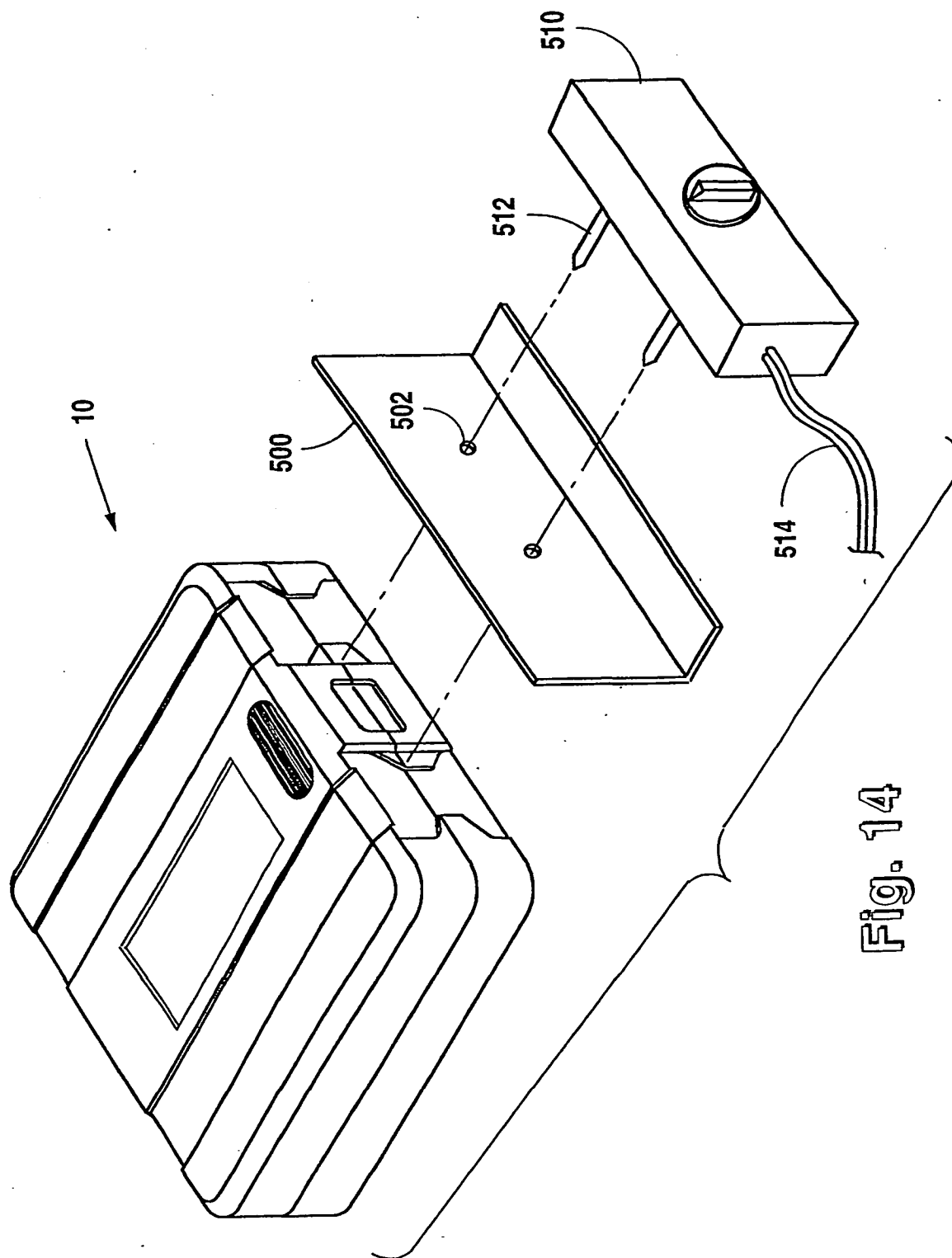
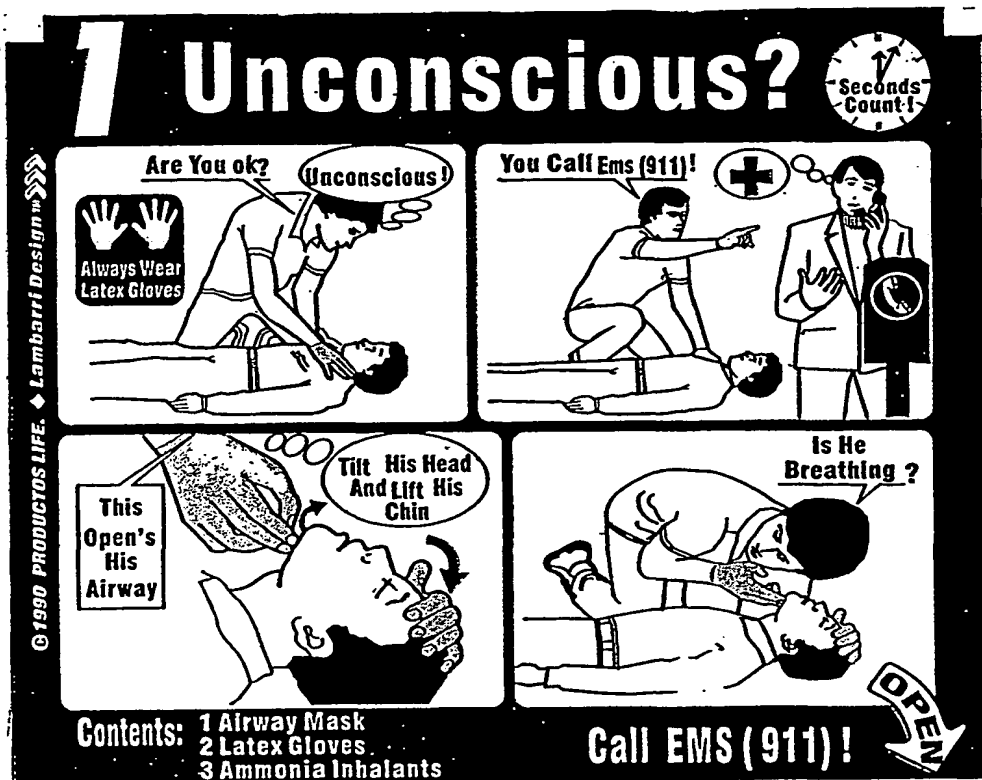
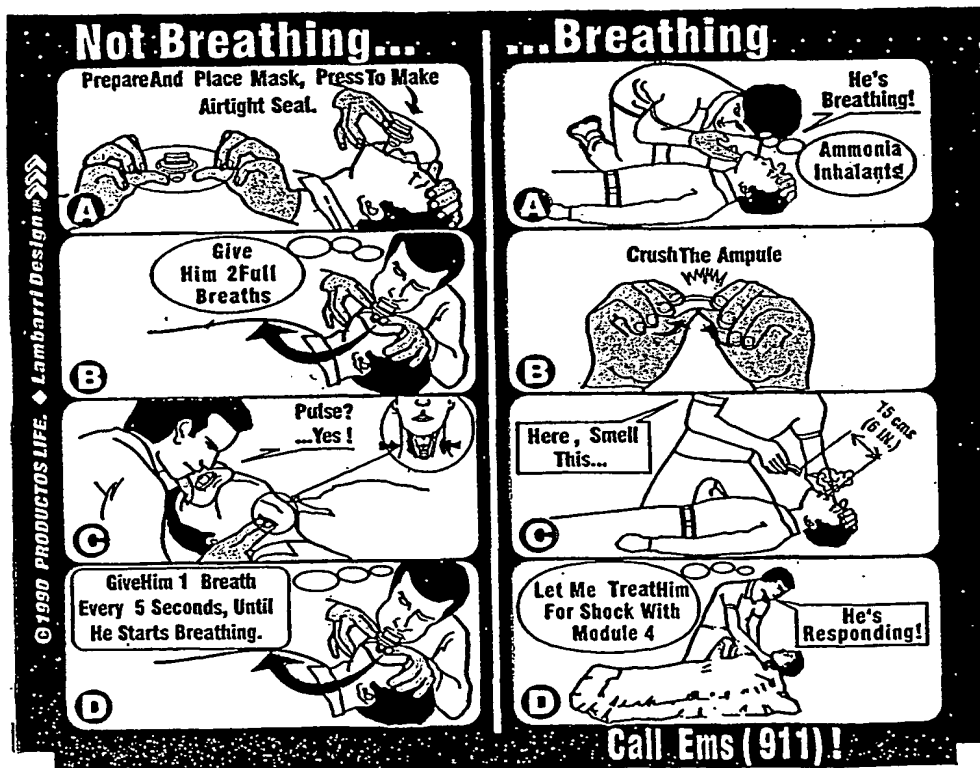


Fig. 14

Fig. 15



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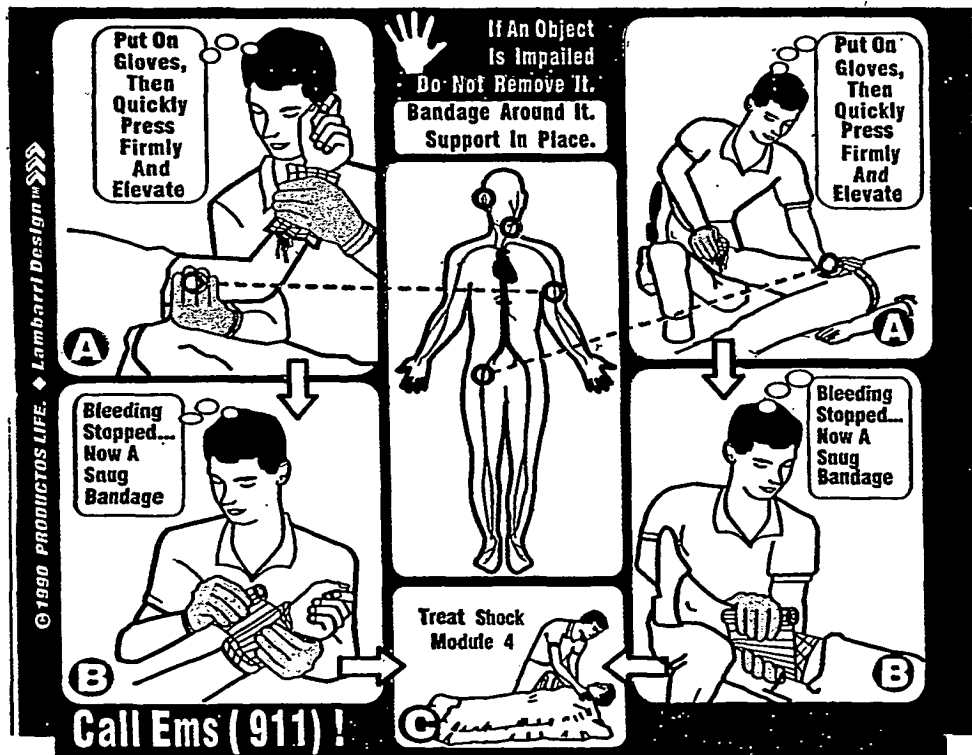


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Fig. 16



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Fig. 17

**3 Poisons** Seconds Count!

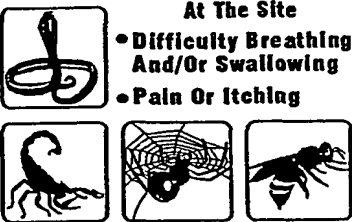
**Swallowed**

- Evidence Of Open Container
- Unusual Breath Odor
- Sudden, Unexplained Illness
- Burns Around The Lips Or Tongue



**Injected**


- Bite Marks, Swelling, Red Discoloration At The Site
- Difficulty Breathing And/Or Swallowing
- Pain Or Itching



**Absorbed**

If The Clothes Or Skin Had Contact With A Poison Or Corrosive...


Remove Affected Clothes And Flush Thoroughly With Water For 15 Min.



**Inhaled**

If You Inhaled Toxic Fumes...

Move To A Properly Ventilated Area Or Get Fresh Air.



**Contents:** 1 Venom Extractor, 1 Syrup of Ipecac, 1 Ice-Pack, 1 Constricting Band, 3 Sting Swabs, 3 Antiseptic Swabs, 4 Extractor Cups

**Call EMS (911)!** OPEN

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**If Swallowed:**

- Aspirin
- Detergents
- Gasoline
- Hydrocarbons
- Iodine
- Kerosene
- Medicines
- Paint
- Pesticides
- Plants
- Polishes
- Poisoned Food
- Rat/Roach Poison
- Varnish

**Induce Vomit**

Give Ipecac. One Table Spoon For Children Over 1 Year & Two For Adults, With Cup Of Water.



**If Swallowed:**

- Acetone
- Acids
- Alcohol
- Ammonia
- Drain Cleaners
- Insecticides
- Lotions
- Laundry Bleach
- Mushrooms
- Pine Oil
- Sedatives
- Wax

**Do Not Induce Vomit**

Give 1 Or 2 Cups Of Water By The Sip.



**Injected Poisons**

Lower the Affected Area. Apply Constricting Band.

**1** Pull the Obturator Of The Extractor. Place The Extractor With Its Cup Pressing Over The Area.

**2** Press The Obturator All The Way To Obtain Aspiration



**3 Min.**

Aspirate For 3 Min. Repeat 7 Times.

Apply Antiseptic To The Area After The 7th Time.

Rub Sting Swab On, Only After The 7th Time.

**In Any Case - Call Ems (911)!**

Squeeze Packet Firmly To break Inner Pouch. Shake To Mix Contents.

Apply Cold Pack Above The Bite Marks

Treat Shock Module 4

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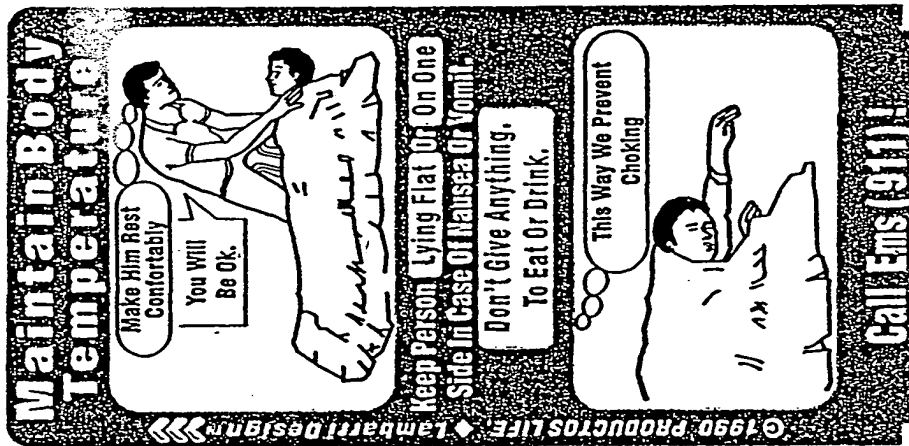


Fig. 18

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### Low Blood Sugar

**A** Twist Off The Cap



**B** Squeeze Slowly And Evenly All The Content Under The Tongue



### Heat Emergency

- Remove From Heat
- Remove All The Excess Clothing.
- Rest Victim Comfortably Under A Shade.
- Apply Cool, Wet Cloths To The Skin.
- Give Victim 2 Electrolyte Tablets With 1 Glass of Water Every 15 Min.



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Call Ems (911)!

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### Low Blood Sugar

**5**

If Diabetic You Took Your Medication But... You Failed To Eat.

- Not Diabetic But You Feel
- Weak
- Confused
- Shaky
- Sweaty
- Hungry
- Ill

Made Heavy Exercise



### Heat Emergency

Heavy Exercise In Hot And Humid Environment

Heat Exhaustion

Heat Stroke

Pale, Cool And Moist Skin

Hot, Dry And Red Skin




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Call Ems (911)!

Contents: 1 Liquid Glucose Tube  
12 Electrolyte Tablets

Fig. 19

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**OPEN**

# Pain & Fever

Personal Items

Name _____
Allergy / Illness _____
Blood Type ( ) _____

Name _____
Allergy / Illness _____
Blood Type ( ) _____

Name _____
Allergy / Illness _____
Blood Type ( ) _____


Name _____
Allergy / Illness _____
Blood Type ( ) _____

Name _____
Allergy / Illness _____
Blood Type ( ) _____

**Identifications**

Contents: 20 Pain / Fever Tablets

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Use Tablets For The Following Indications. Relief Of Minor Pain In:

- Arthritis
- Backaches
- Bursitis
- Common Cold
- Headaches
- Menstrual Cramps
- Muscular Aches
- Neuralgia
- Over Exertion or Fatigue
- Rheumatism
- Sinusitis
- Toothaches

**Fever:**

- Remove Excess Clothing.
- Bathe In Lukewarm Water.
- Beware Of Air Currents.
- Give Medicine In The Following Doses.

**Doses: Pain & Fever**

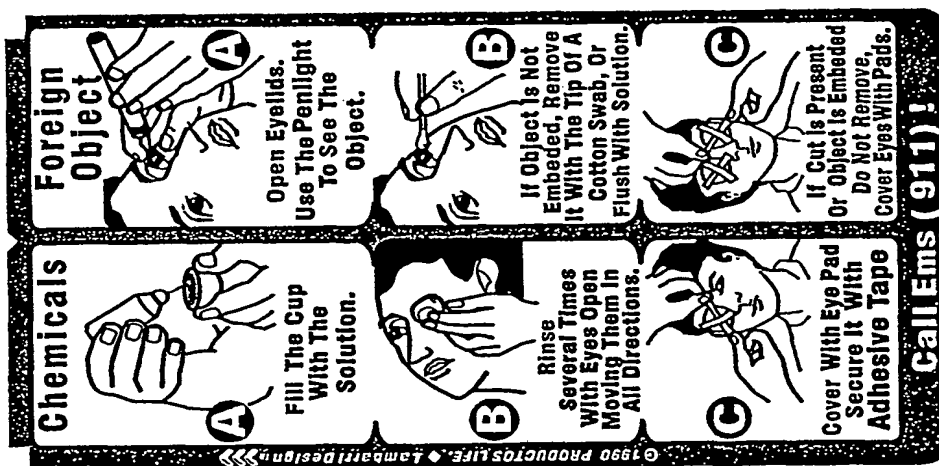
▲ 1-3 Yrs. =	1/4 Tablet	e/6 Hrs.
▲ 3-6 Yrs. =	1/4 Tablet	e/4 Hrs.
▲ 6-12 Yrs. =	1/2 to 1 Tablet	e/6 Hrs.
▲ Adults =	1 to 2 Tablets	e/6 Hrs.

Acetaminophen Does Not Upset Stomach Or Cause Heartburn. Always Consult Your Doctor

Fig. 20



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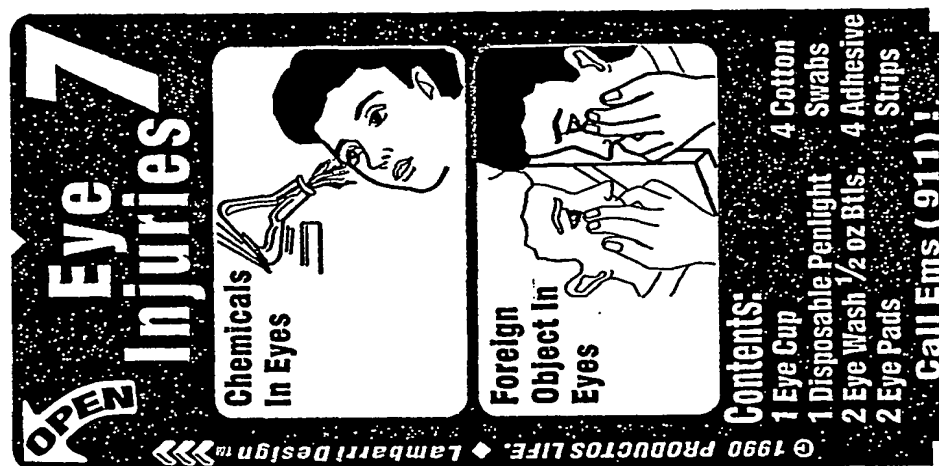
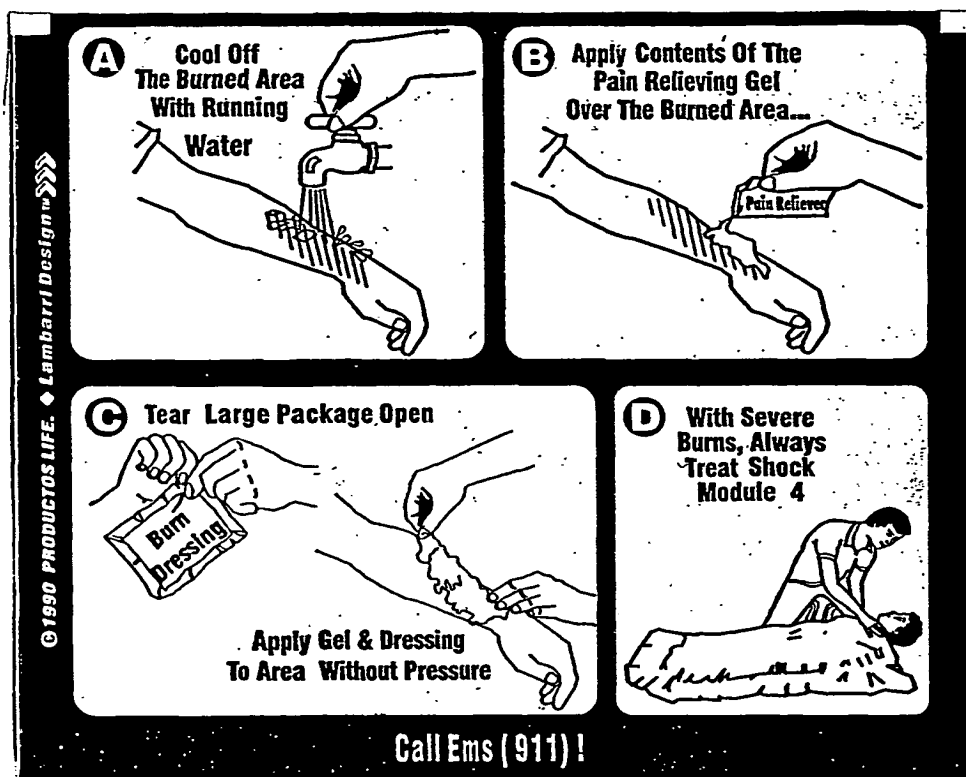


Fig. 21

Fig. 22

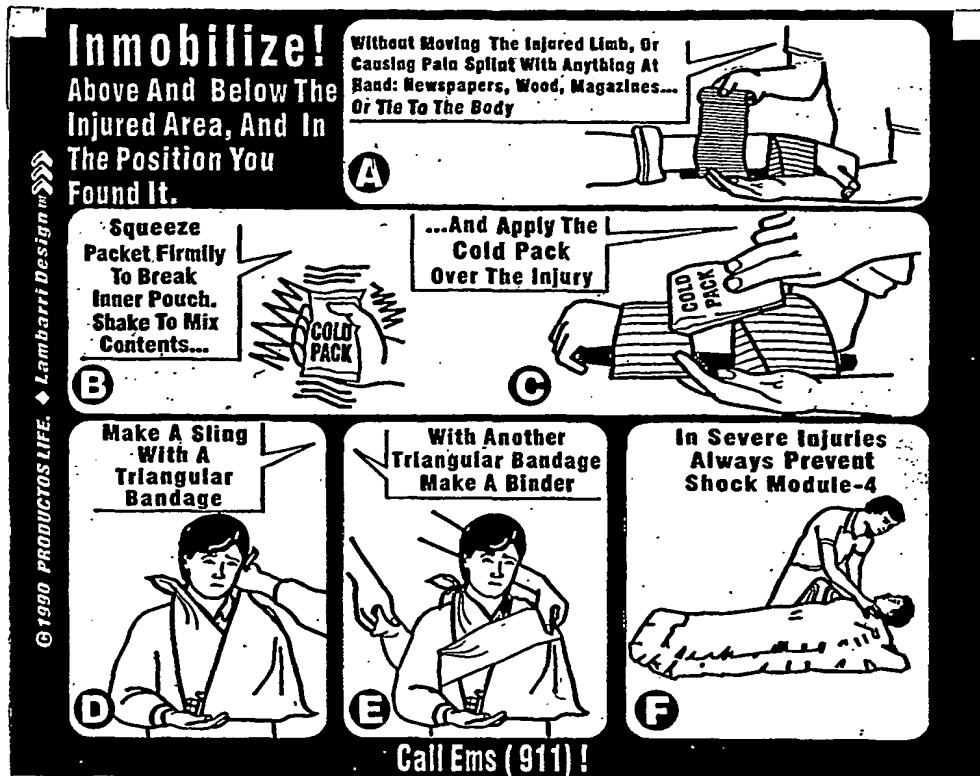


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Fig. 23

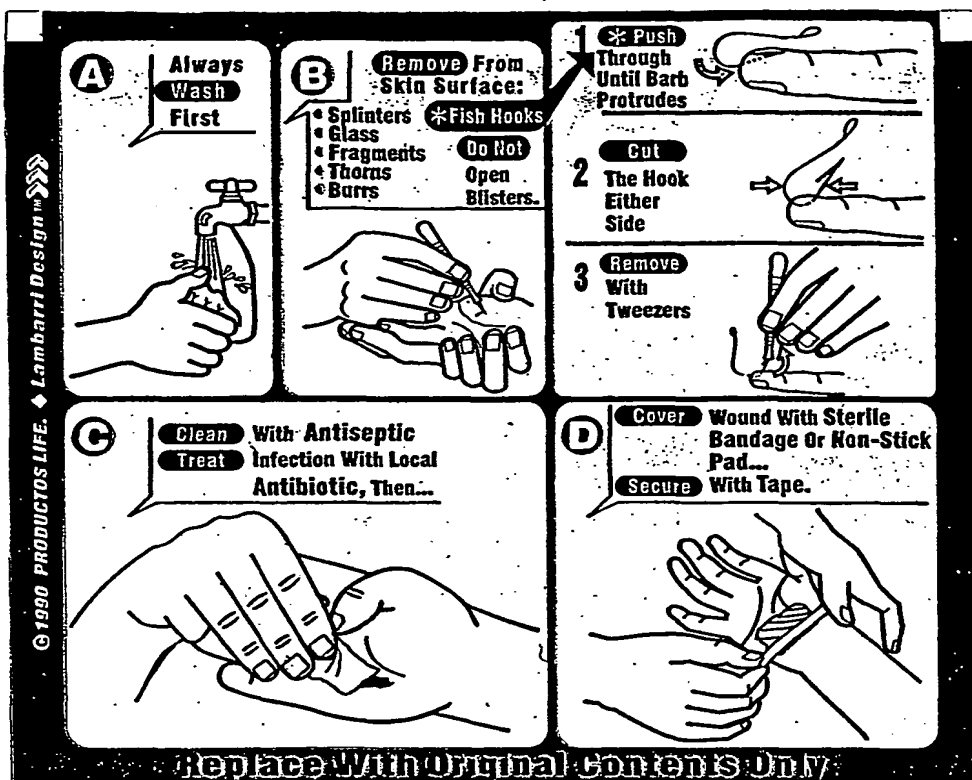


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Fig. 24



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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/14947

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B65D 69/00

US CL : 206/459.5, 523, 570, 572

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 206/370, 438, 459.5, 523, 570-572; 16/Dig. 24-25, Dig. 41; 24/453, 60; 220/752, 759

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	ZEE MEDICAL, INC. First Aid Kit, 1995. See the description and the Figures.	1-8  9, 14-15, 35-36
X — Y	US 5,638,577 A (GOODING ET AL) 17 June 1997. See Figures 1-2.	31  9, 35-36
Y	US 5,547,079 A (PINO) 20 August 1996. See column 1, lines 27-33.	14-15

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

19 July 2001 (19.07.2001)

Date of mailing of the international search report

14 AUG 2001

Name and mailing address of the ISA/US

Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703)305-3230

Authorized officer

Luan K Bui

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*Sheila Venev*  
Paralegal Specialist  
Technology Center 3700

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/14947

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claim Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:  
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.: 1-9, 14-15, 31, 35-36
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐  
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/14947

**BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING** This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-8, drawn to a case having a plurality of compartments containing medical supplies and a plurality of lids with each lid having a graphical illustration of a particular medical emergency.

Group II, claim(s) 9, 31 and 35-36, drawn to a case having a plurality of compartments containing medical supplies and a handle having at least one probe with a catch for engaging a snap-in fastener.

Group III, claim(s) 10-13 and 16-28, drawn to a first case module and a second case module containing medical supplies, and at least one case hinge connecting the first case module and the second case module.

Group IV, claim(s) 14-15, drawn to a case having at least one compartment containing medical supplies and the case is buoyant in water.

Group V, claim(s) 29-30 and 32-34, drawn to a fastener including a planar head having a shaft and a plurality of barbs protruding from the shaft.

The inventions listed as Groups A-E do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention is the particular of each lid having a graphical illustration of a particular medical emergency; while the special technical feature of the Group II invention is the particular of the handle having at least one probe with a catch and at least one snap-in fastener having at least one prong adapted to engage the catch; while the special technical feature of the Group III invention is the particular of a first case module and a second case module and a case hinge connecting the first case module and the second case module; while the special technical feature of the Group IV invention is the particular of the case is buoyant in water and capable of serving as a personal flotation device; while the special technical feature of the Group V invention is the particular of the a fastener including a planar head having a shaft and a plurality of barbs protruding from the shaft. Since the special technical feature of the Group I invention is not present in the Groups II-V claims and so on, unity of invention is lacking.

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